

CLAIMS

1. An appliance for cooking food under pressure, the appliance comprising at least:

- a vessel (1) and a lid (2) for being fitted and
5 locked on said vessel (1) in order to form a leaktight cooking enclosure;
- one or more jaws (3) for locking the lid (2) relative to the vessel (1); and
- drive means (5) for driving said at least one jaw
10 (3) between a locking position and an unlocking position;
the appliance being characterized in that it includes a module (6) for fitting on and releasably securing to the lid (2), said module (6) including at least a device (7, 8, 17) for controlling locking and
15 unlocking of the lid (2) relative to the vessel (1).

2. A cooking appliance according to claim 1, characterized in that it includes a timer (11) optionally removably mounted on the module (6).

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3. A cooking appliance according to claim 1 or claim 2, characterized in that the module (6) includes a pressure regulator valve (12):

- which is arranged within the module so as to be in
25 leaktight communication with a regulator opening (12B) formed through the lid (2);
- which is responsive to the pressure that exists inside the cooking enclosure; and
- which is mounted to move between two stable
30 abutment positions, a first position in which it closes off communication from the enclosure to the outside so long as the internal pressure is less than a predetermined pressure P_1 , and a second position in which it puts the inside of the enclosure into communication
35 with the outside via a steam outlet (13) as soon as the internal pressure reaches substantially the predetermined pressure P_1 .

4. A cooking appliance according to any one of claims 1 to 3, characterized in that the module (6) incorporates a pressure sensor and/or a temperature sensor (15).

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5. A cooking appliance according to claim 3 and claim 4, characterized in that the temperature sensor (15) is disposed in the vicinity of the steam outlet (13) so as to sense the increase in temperature that results from steam passing through the steam outlet (13).

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6. A cooking appliance according to claims 2 and 5, characterized in that the temperature sensor (15) is functionally connected to the timer (11) so as to cause it to be triggered as soon as the temperature rise is sensed.

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7. A cooking appliance according to any one of claims 1 to 6, characterized in that the module (6) incorporates an excess pressure safety valve (16):

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- which is arranged within the module (6) so as to be in leaktight communication with a pressure relief opening (16B) formed through the lid (2);

- which is responsive to the pressure that exists inside the cooking enclosure; and

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- which is mounted to move between two stable abutment positions, a first position in which said safety valve (16) closes off communication from the enclosure to the outside so long as the internal pressure is below a predetermined pressure P_2 , and a second position in which it puts the inside of the enclosure into communication with the outside as soon as the internal pressure reaches substantially the predetermined pressure P_2 .

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8. A cooking appliance according to any one of claims 1 to 7, characterized in that the module (6) incorporates the drive means (5) for driving the at least one jaw (3).

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9. A cooking appliance according to any one of claims 1 to 8, characterized in that the module (6) incorporates the at least one jaw (3).

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10. A cooking appliance according to any one of claims 1 to 9, characterized in that:

• the at least one jaw (3) is mounted to be moved in translation by at least one respective drive arm (5) between the locking position and the unlocking position; and

• the device (7, 8, 17) for controlling locking and unlocking comprises a main control member (7) mounted to move in translation and an intermediate transmission part (17) positioned to turn freely relative to the main control member (7) and to the drive means, so as to be turned by the main control member (7) in order to engage the drive means (5) so as to govern the displacement thereof.

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11. A cooking appliance according to any one of claims 1 to 10, characterized in that the module (6) incorporates opening/closing safety means (21) which are arranged within the module (6) so as to be in leaktight communication with a safety opening (21B) formed through the lid (2), the position thereof being responsive to the pressure or the temperature that exists in the cooking enclosure, said safety means (21) being mounted to move between two stable abutment positions, a first position in which said safety means (21) puts the inside of the enclosure into communication with the outside below a predetermined internal pressure P_3 , and a second position in which it closes off communication from the enclosure to the outside when the pressure P_3 is reached, in order to enable the pressure inside the appliance to rise and cooking to take place.

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12. A cooking appliance according to claims 10 and 11, characterized in that the intermediate transmission part (17) is shaped so as to co-operate with the safety means (21) so that said means prevent the intermediate
5 transmission part (17) from turning and thus prevent the lid (2) from being unlocked while the internal pressure is greater than or equal to the pressure P_3 , said intermediate transmission part (17) also being shaped to prevent the safety means (21) from reaching its position
10 in which it closes off communication from the enclosure to the outside when said intermediate transmission part (17) is in a position other than its position corresponding to locking.

13. A cooking appliance according to any one of claims 1 to 12, characterized in that the module (6) incorporates bistable leakage means:

• which are arranged within the module so as to be in leaktight communication with a leak opening formed
20 through the lid; and

• which are suitable for taking up firstly an open position allowing air to leak from the inside of the cooking enclosure to the outside, and a closed position corresponding to no leakage of air to the outside.

14. A cooking appliance according to claims 11 and 13, or 12 and 13, characterized in that the bistable leakage means are integrated in the safety means (21).

15. A cooking appliance according to claim 14, characterized in that the bistable leakage means are integrated in a pressure gauge rod and include, as a moving shutter element, a bimetallic strip supported by said pressure gauge rod.

16. A cooking appliance according to any one of claims 13 to 15, characterized in that the bistable leakage means are means for venting air from the appliance.

5 17. A cooking appliance according to any one of claims 1 to 16, characterized in that the module is fixed to the lid by means of a screw-and-nut system (22, 23) that tightens progressively in co-operation with a fastening opening (22B) formed through the lid (2).

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18. A cooking appliance according to claim 17, characterized in that the fastening opening (22B) is formed substantially at the center of the lid.

15 19. A cooking appliance according to claims 6, 7, 10, 15, 16, and 18, characterized in that there are two jaws (3) mounted to move radially on the lid (2) by two respective drive arms (5) between the locking position and the unlocking position, each of said drive arms (5) being
20 provided with an axial guide stud (10A, 10B), and in that the module (6) comprises firstly a seat (18) presenting an inside face (18A) and an opposite outside face (18B), which seat provides the interface with the lid (2) when the module (6) is fitted on and secured to the lid, said
25 seat (18) being provided:

- with the excess pressure safety valve (16);
- with the pressure regulator valve (12) provided with a user-adjustable rating system (14);
- with a steam outlet duct (13) starting downstream
30 from the pressure regulator valve (12) and having the temperature sensor (15) mounted in the vicinity thereof;
- with a one-piece assembly including the air venting means integrated in the pressure gauge rod (21);
- with a fixing pin (22) extending substantially
35 from the center of the outside face in order to secure the module (6) releasably to the lid (2);

· with an assembly pin (19) extending substantially from the center of the inside face (18A), and on which there is pivotally mounted a pivoting plate (17) as an intermediate transmission part, which pivoting plate (17) is provided with two oblong drive slots (17A, 17B) disposed symmetrically about the assembly axis (19), said oblong drive slots (17A, 17B) co-operating with two respective rectilinear oblong slots (19A, 19B) formed radially in the seat (18) to define two engagement openings (20A, 20B) for engaging each of said guide studs (10A, 10B); and

· with an opening pushbutton (7) mounted to move radially relative to the assembly axis (19) and including an oblong drive orifice (7A) extending obliquely relative to the radial direction and co-operating with a guide peg (17C) secured to the pivoting plate (17) so that radial displacement of the opening pushbutton (7) causes the pivoting plate (17) to turn, thereby causing the engagement openings (20A, 20B) to move radially and entrain the guide studs (10A, 10B) and thus the arms (5) and the jaws (3) to the unlocking position;

and secondly a top cap (26) which covers the seat (18) and all of the elements that are mounted therewith, and comprising at least:

· a housing (11C) for receiving the timer (11) provided with at least one electrical connection tab (11D) functionally connected to the temperature sensor (15); and

· an axially movable closure pushbutton (8).

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20. A module (6) for a food cooking appliance for being used and mounted on a lid (2) of an appliance for cooking under pressure in accordance with any one of claims 1 to 19.

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